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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,555	01/31/2002	Joerg Bischoff	509982003300	2744
20872	7590	10/08/2003	EXAMINER	
MORRISON & FOERSTER LLP			SHAH, KAMINI S	
425 MARKET STREET			ART UNIT	
SAN FRANCISCO, CA 94105-2482			PAPER NUMBER	

2863

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/066,555

Applicant(s)

BISCHOFF ET AL.

Examiner

Kamini S Shah

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-91 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18, 38-45, 55-64, 70-77, 85 and 87 is/are rejected.
- 7) ☒ Claim(s) 19-37, 46-54, 65-69, 78-84, 86 and 88-91 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-18, 38-45, 55-64, 70-77, 85, and 87 are rejected under 35

U.S.C. 102(b) as being anticipated by Matsumoto (5,559,598).

Regarding to claimed invention, Matsumoto teaches a position detection apparatus for measuring the positions of mark and a wafer as to claimed overlay measurements for semiconductor wafer, the method/apparatus comprising:

Forming periodic grating on the wafer having first set of gratings formed on wafer using first mask such as first diffraction grating pattern 7a formed on a wafer 6; a second set of grating formed on the wafer using a second mask, such as diffraction grating pattern 7b formed on the wafer 6, see col. 5, lines 39-45. Furthermore, Matsumoto teaches the claimed feature such as first and second sets of gratings are intended to be formed on the wafer with an intended asymmetrical alignment, as in figure 3-4, when the position of the two diffraction gratings, serving as misalignment detection marks, on the surface of the wafer 6, the positions of the diffracted light beams change little, accordingly, the amount of relative misalignment between the diffraction gratings 7a and 7b is obtained in equation 13, see col. 6, lines 59-65 and col. 8, lines 26-32.

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Regarding to claimed zero-order diffraction signal, and is measured using an optical metrology system including an ellipsometer, Matsumoto discloses illuminating means for projecting the light of the light source onto the first and second diffraction gratings so that the first diffraction grating produces first and second diffracted light beams of different diffraction orders or the same diffraction order, see col. 3, lines 57-68.

Regarding the claimed diffraction signal is measured using an incident signal with a normal incident angle, Matsumoto discloses the reflected light beam L2 passing through the lens 25 and is incident upon the wafer 6 at incident angle  $\alpha$ , see col. 11, lines 25-30.

Regarding independent claims 38, 55, 70 and 85, claims recite similar subject matter either in combination with other dependent claims as in claims 1-18 rejected hereinabove.

Regarding claims 39-45, 56-64, 71-79, and 87, claimed subject is similar to rejected claims 12-14, and are rejected for the similar reasoning.

***Allowable Subject Matter***

3. Claims 19-37, 46-54, 65-69, 78-84, 86 and 88-91 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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**Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 4,631,416.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kamini S Shah whose telephone number is 703-305-9590. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
Kamini S Shah  
Primary Examiner  
Art Unit 2863

kss